



Measuring the ROI of Enterprise Search

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www.voyagersearch.com

The Problem: Data Not Found

Organizations of every size are awash in “Big Data.” The promise of being able to understand where your customers are and when they’ll shop, or where your enemies are and where they’ll strike, has put information infrastructure atop the goals leaders in the public and private sectors alike. But the cost can be high when trying to extract information from the data noise. The data is growing in our knowledge-based economy by an estimated 200 percent a year, and one Fortune 500 CTO estimated that it costs him \$10,000 per terabyte of data per year to manage it. With that expense, it is important to be able to eliminate waste and extract value.

What IDC found in *The High Cost of Not Finding Information* was that while leadership at the enterprise wants to make information discovery easy and wants to encourage sharing between workers, most employees were unable to unlock these resources. As a result, the reality is that the workers end up duplicating resources or worse, making bad decisions with only partial information.

The second problem is that even when search is implemented, some of the data is tucked away on a “shadow” intranet — the desktop computer, someone’s laptop or an old hard drive. IDC estimates that 35 to 50 percent of information is hidden in some offline repository that is unavailable to the rest of the organization. GIS managers call this *data hoarding*.

Both of those problems are compounded in geospatial organizations because knowledge workers need specialized data with geographic references to do their jobs, and their corporate IT department has developed an enterprise search engine that simply doesn’t understand spatial data.

The High Cost of Doing Nothing

What are the costs of inaction? That may vary from organization to organization, but IDC put together some scenarios to help us estimate costs in any field and any organization with a knowledge-based workforce.

1. Time Wasted Searching but not Finding What's Needed.

Assumptions:

- Salary + benefits of each employee = \$80,000
- Number of Employees: 1,000
- Time spent searching daily: 2.5 hours per day
- “Hidden” information: 50% of total
- Calculation of cost: \$80,000 (52 weeks (40 hours/week x 2.5 hours/week searching x 1,000 knowledge workers x 50% unindexed information)

Conclusion: Our fictional company wastes \$2.5 million per year on salaries alone.

2. The Knowledge Deficit

A 1999 IDC study found that Fortune 500 companies would lose \$12 billion as a result of a *knowledge deficit* — substandard work, rethinking of an idea with more complete information or inability to find resources. A study by Kit Sims Taylor reports that knowledge workers unwittingly recreate existing knowledge more than they generated new ideas. By plugging the leakage, organizations can increase efficiency.

Assumptions:

- Salary + Benefits = \$80,000
- Number of Employees: 1,000
- Knowledge Deficit: \$5,000 per year/per employee
- Calculation of cost: 1,000 knowledge workers x \$5,000 per year

Conclusion: Our fictional company wastes \$5 million per year because employees spend time duplicating information that already exists.

3: Opportunity Costs

Time spent doing the tasks above has the added impact of coming at the cost of other opportunities.

Assumptions:

- Revenue per employee: \$500,000 per year, or \$240 per hour
- Calculation of cost: 1,000 employees x 50% failed searches x \$240/hour x 2.5 hours searching

Conclusion: Our fictional company loses more than \$15 million per year in opportunity costs.



The Solution: Spatially Enabled Enterprise Search

Voyager provides the solution to this problem by providing an easy-to-use, out-of-the-box search solution that can support a wide variety of users around the globe. It is open and scalable but has advanced security. Voyager can index more than 1000 different types of content and can connect to dozens of different repositories. Most importantly, Voyager is the **only** spatially enabled enterprise search solution.

Voyager can index:

- A vast array of geospatial datasets and document types
- Web mapping services
- Web portals (OGC, Inspire, Esri's ArcGIS Online)
- Non-spatial formats
- Document management systems (Sharepoint, Documentum, etc.)
- Database tables
- FTP and Web server content
- Other search engine content whether it's from Autonomy, GSA, Visimo, etc.

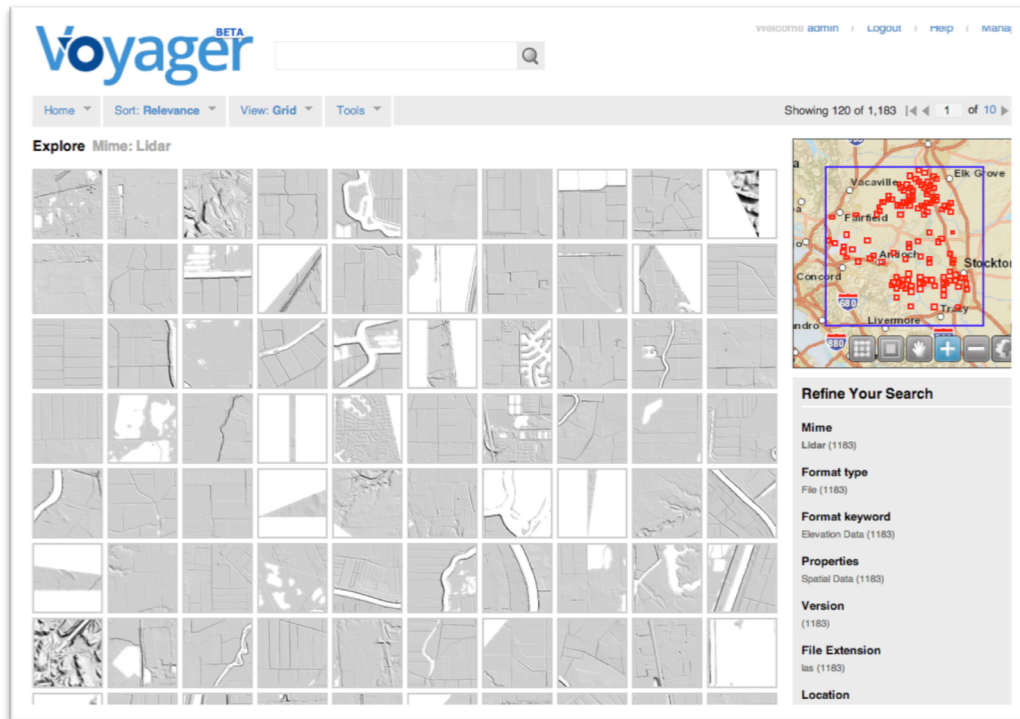
This allows big enterprise organizations to find content regardless of what type it is or where it is stored.

Voyager's Federated Search links indexes together to enrich results and simplify the user experience. Users can investigate multiple Voyager indexes with a single query and gain access to more data more efficiently than ever before. By installing Voyager at each location and then linking the indexes together, a multinational organization can achieve the one-search vision.

Another advantage of Voyager is that it fits within existing workflows. Organizations simply install Voyager, point it to their content and it builds an index automatically. Metadata is not required, but will be leveraged if it exists. Voyager references the location of data but does not copy it. This allows organizations to deliver content through existing data dissemination and security infrastructure procedures and adds value by securely delivering content via its own HTTP download or via spatial-ETL processes.

Voyager for End Users

Once the index is built, workers can start to extract the true value of the system. Voyager allows workers to easily find, use and share data so that they can improve decision-making, be more productive, reduce duplication of effort and even allow their information to be discoverable without specialized software by anyone in their organization.



Voyager's Web UI and ArcMAP integration help analysts easily find, use and share content. They can find the content by drawing a spatial extent, entering a keyword search, using filters or any combination of the three methods. The results are visualized almost instantly as thumbnails with contextual information and results are shown in geographic context on an interactive map. The thumbnails and overview map make it easy to preview items and provide the relevant geographic context. Further, Voyager's new database connector allows users to search content stored in database tables as easily as they search the web. This frees them of having to understand database schemas and complex query languages.

Voyager for Data Managers

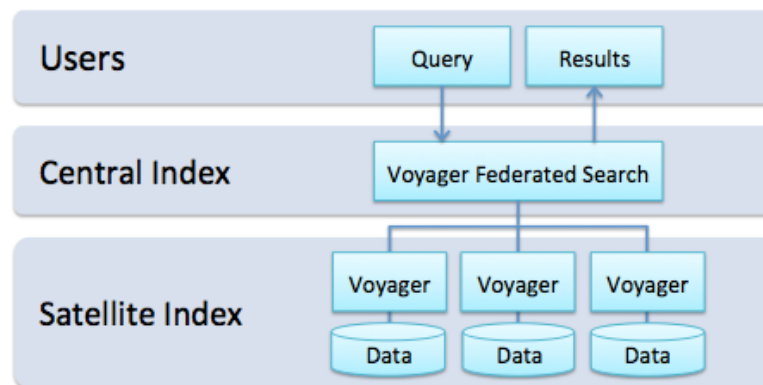
Data managers can clean and harmonize the content in their collection by finding and removing duplicate data. They can save money by avoiding the purchase of duplicate data licenses. They can improve an analyst's ability to make decisions in a timely manner by promoting authoritative content. They can understand what types of content are most-used so that they spend money on what is needed most. To avoid costly errors, they can inventory maps and analytical models, ensuring they leverage the most authoritative resources. And finally, they can efficiently deliver data to users in a modern search experience.

The screenshot shows the Voyager BETA web interface. At the top, there is a navigation bar with the Voyager logo, a search bar, and user information: "Welcome admin | Logout | Help | Manage". Below the navigation bar, there is a main menu with "Home" and "Manage Voyager". The main content area is divided into two columns. The left column contains several sections with icons and titles: "Manage Voyager" (with a house icon), "Discovery" (with a magnifying glass icon, "Manage Indexing and Thumbnails"), "Index" (with a document icon, "Configure and manage the index."), "Settings" (with a gear icon, "Configure licenses, map server and index properties."), "Extensions" (with a globe icon, "Configure Extensions"), "Security" (with a group of people icon, "Configure authentication and security settings."), and "System" (with a computer monitor icon, "Version: 1.9.0.989, Running As: voyager, Process ID: 4280, Machine Key: F6C7CC7A, Document Count: 296948, Sessions: 2, Uptime: 1 day 21 hours 53 minutes 44 seconds, Windows 7 [6.1] amd64, 269.8 MB of 910.2 MB (30%)"). The right column contains a "Manage Voyager" sidebar with a search bar and a list of links organized into sections: "Discovery" (Status, Locations, History, Schedule, Formats, Discovery Configuration, Metadata Extraction), "Index" (Query Settings, Query Synonyms, Dynamic Labeling, Federated Catalog Search, Replication, Backup and Restore), "Settings" (Appearance, Alerts, Mapping, Logging, License), "Extensions" (Map Studio, CSW Server, FME Integration, Downloader), "Security" (Authentication, Users, Sessions, Permissions, Access), and "System" (Logging).

Voyager Enterprise Architecture

In order to provide online, on-demand access to every piece of data, a global organization must not only manage accumulating information but also make it discoverable across that enterprise. With information in so many different places, locating individual repositories through multiple interfaces can make this nearly impossible. That's where Voyager's Federated Search comes in. It provides an easy-to-deploy solution that allows a large organization to simultaneously search across multiple Voyager indexes. The user would make a single request that would return unified results from multiple Voyager instances.

Federated Search Architecture



Federated Search allows organizations to create a single view of all of their available data without storing all of the data in one place or even storing it in any particular way.

Voyager can be pointed to wherever the data exists. Once content is indexed, data owners can use Voyager to search remote data as easily as searching their own hard drive. Multiple Voyager instances can also be linked together to see other content all while honoring existing data dissemination and security infrastructure.

Voyager creates a catalog of data but does not move or store the data itself, allowing content to stay wherever it is and existing systems will continue to work. This eliminates costly data migration and system re-engineering. At the same time Voyager can be used to find and promote authoritative content along with delivering processes to migrate data from tucked-away systems.



Conclusion

Voyager Search delivers a complete, open, enterprise search solution that unlocks hidden value for knowledge workers and data manager alike.

- For the Executive, it can save the organization money.
- For the team, it will spare them from the frustration and inefficient of not finding what they need and causing them to do re-work.
- For everyone, it will promote better decision-making. Voyager Search is fast and efficient to use and to manage. And Voyager works within existing systems and infrastructure.

Voyager Search is uniquely positioned to solve the problems faced by any geospatial entity, while helping to deliver value to the employees, shareholders and customers.